

Evacuation Routes and Clearance Time

The evacuation routes for Harrison County are State Highway 49 (north), I-110 (north), State Highway 67 (north), I-10 (east/west), and US 90 (east/west). The east/west routes are used to access other north/south corridors in neighboring counties (personal communication, L. Rouse, Director, Harrison County Civil Defense, Gulfport, MS, and R. LeBeau, EDAW, September 2, 1999). The evacuation routes are shown in Figure 3.15-1. In Harrison County, the critical link is State Highway 49 near the northern border of the county. (The critical link is a "bottleneck" or a section in the road system that would reduce evacuation time if physically improved or bypassed in some way.)

Clearance time is the time required to empty the roadway of all vehicles evacuating in response to a hurricane evacuation order. Clearance time begins when the first evacuating vehicle enters the road network and ends when the last evacuating vehicle reaches an assumed point of safety. Table 3.15-1 provides the clearance times developed in the 1997 Update Report. Depending on the tourist occupancy and speed of evacuation, clearance times for Harrison County range from 8 to 11 hours for Category 1 and 2 hurricanes and from 19 to 23 hours for Category 3, 4, and 5 hurricanes.

Table 3.15-1
Hurricane Evacuation Data for Harrison County, 1997

Evacuation Scenario	Evacuating Population	Shelter Demand	Evacuating Vehicles	Vehicles at Critical Link*	Clearance Time (hrs)
Category 1-2 Intensity					
<i>Peak Season</i>					
Slow Evacuation	111,200	10,600	49,170	23,704	11.150
Medium Evacuation	111,200	10,600	49,170	22,956	10.115
Fast Evacuation	111,200	10,600	49,170	22,457	9.557
<i>Off-Peak Season</i>					
Slow Evacuation	94,300	10,300	42,108	20,014	9.843
Medium Evacuation	94,300	10,300	42,108	19,264	8.726
Fast Evacuation	94,300	10,300	42,108	18,763	8.090
Category 3-5 Intensity					
<i>Peak Season</i>					
Slow Evacuation	189,800	22,300	79,417	55,411	23.430
Medium Evacuation	189,800	22,300	79,417	54,690	22.988
Fast Evacuation	189,800	22,300	79,417	54,190	22.779
<i>Off-Peak Season</i>					
Slow Evacuation	171,500	21,900	71,730	47,601	20.262
Medium Evacuation	171,500	21,900	71,730	46,852	19.722
Fast Evacuation	171,500	21,900	71,730	46,532	19.513

* Includes background traffic not involved in evacuation.

Source: USACE, Mobile District: Mississippi 1997 Coastal Hurricane Evacuation Clearance Time Update Technical Memorandum.

Shelters

The public shelters in Harrison County have a capacity of 5,980. The shelters are open to residents and visitors along the coast, although most visitors leave the area in the event of an evacuation. The potential shelter demand for residents and visitors in Harrison County ranges from 10,300 to 22,300, depending on the scenario (USACE, 1997). However, according to the American Red Cross, which operates the public shelters, experience shows that not all of the projected demand is used and the shelters provide sufficient capacity (personal communication, B. Burge, Red Cross, Biloxi, MS, and R. LeBeau, EDAW, October 21, 1999).

3.15.1.3 Casinos and Marinas as Related to Hurricanes

Casino barges have mooring restraints that are designed to keep barges in place during winds up to 130 miles per hour (Peterson, 1998). In addition, each casino is responsible for preparing and submitting an emergency disaster plan to the appropriate local civil defense agency. This disaster plan is required to address mitigation plans, contact persons, evacuation procedures, storm preparations, and post-storm clean-up activities (personal communication, F. Dugan, Chief of Biloxi Civil Defense, MS, and R. LeBeau, EDAW, September 1, 1999).

The only hurricane to strike the coast since casinos were established was Hurricane George in 1998. It is generally thought that this Category 2 storm was not a true test of the casinos' ability to withstand a storm event because it was not a strong storm (Peterson, 1998). Regardless, the hotel structures proved sound and no casino barges washed ashore, although the Treasure Bay barge drifted about 40 feet from its pier. Per square foot, the broken glass and water damage at the casino resorts was no greater than that sustained by many low-lying, inland buildings (Harris, 1998; Peterson and Nelson, 1998).

There are four marinas on the Mississippi Sound between Biloxi and Gulfport with 993 boat slips, and one marina in the Back Bay with 50 wet and 50 dry boat slips. The evacuation of marinas along the coast is subject to the decision of the individual marina facility operator. However, the U.S. Coast Guard may require that deep-draft vessels (18 feet or greater) be evacuated out to sea (personal communication, A. Davis, Coast Guard Marine Safety, Mobile, AL, and R. LeBeau, EDAW, October 21, 1999).

3.15.2 Fire Services Related to Casino Resorts

Fire service in Biloxi is provided by the Biloxi Fire Department. A general review of the fire services/EMS in Biloxi and the larger three-county region is provided in Section 3.12. The following discussion addresses the possibility of unique conditions at casino resorts and related fire service issues.

Since the advent of gaming in the area, the Biloxi Fire Department has not made significant changes to accommodate the presence of casino resorts. Personnel have attended continuing education courses related to "confined spaces" practices that train firefighters how to address structures and configurations similar to those found in casinos. The most significant challenge

1 resulting from casino facilities is the need for the fire department staff to become familiar with
2 the layout of each facility. The high-rise structure of the casino hotels has not required that the
3 department purchase additional or special equipment. These structures are treated as typical
4 high-rise buildings (personal communication, R. Beddingfield, Training Office, Biloxi Fire
5 Department, MS, and A. Batstone, EDAW, November 19, 1999).

6
7 To date, the fire department has responded to a number of small fires within the casinos. The
8 Biloxi Fire Department was adequately staffed and readily equipped to successfully deal with
9 each of these events. Only one fire incident required the evacuation of a casino and that
10 evacuation was completed successfully. The most recent emergency occurring at a casino to
11 which the fire department responded was the rescue of workers from a collapsed scaffold
12 (personal communication, R. Beddingfield, Training Office, Biloxi Fire Department, MS, and A.
13 Batstone, EDAW, November 19, 1999).

14 15 **3.15.3 Hazardous Material Transport**

16
17 Hazardous materials are transported on the CSX railroad tracks that run parallel to US 90
18 through Biloxi. An average of 8 trains per day travel along these tracks and the majority of them
19 carry hazardous materials. CSX representatives state that CSX transports a variety of hazardous
20 materials on nearly every train through Biloxi (personal communication, W. Gleason, CSX
21 Manager of Hazardous Waste, New Orleans, LA, and A. Batstone, EDAW, November 17, 1999).

22
23 CSX maintains an emergency management plan, the "CSX Transportation of Hazardous
24 Materials Emergency Response Plan." This plan provides detailed emergency information for
25 each railyard and response procedures that take effect in the event of an emergency. This plan
26 does not specify evacuation corridors or procedures for emergencies while in transit. The local
27 government is responsible for these situations. However, in case of an emergency, train crews
28 carry a list of hazardous materials on board and a list of contact persons (personal
29 communication, W. Gleason, CSX Manager of Hazardous Waste, New Orleans, LA, and A.
30 Batstone, EDAW, November 17, 1999).

31
32 In the event of a hazardous material spill on the CSX railroad line, the Biloxi Fire Department
33 would establish a one-mile radius evacuation zone from the accident site, which would include
34 essentially all property from coast to coast on the Biloxi peninsula. A safe zone would be
35 organized immediately around the site until the type and extent of the spill could be determined.
36 If the spill is significant, the Biloxi Fire and Police Departments would evacuate all people
37 within the defined corridor. There are no recorded incidences of hazardous material spills on the
38 CSX line in the city of Biloxi (personal communication, R. Beddingfield, Training Officer, City
39 of Biloxi Fire Department, MS, and A. Batstone, EDAW, November 19, 1999).

Destination Broadwater EIS

Harrison County Hurricane Evacuation Routes

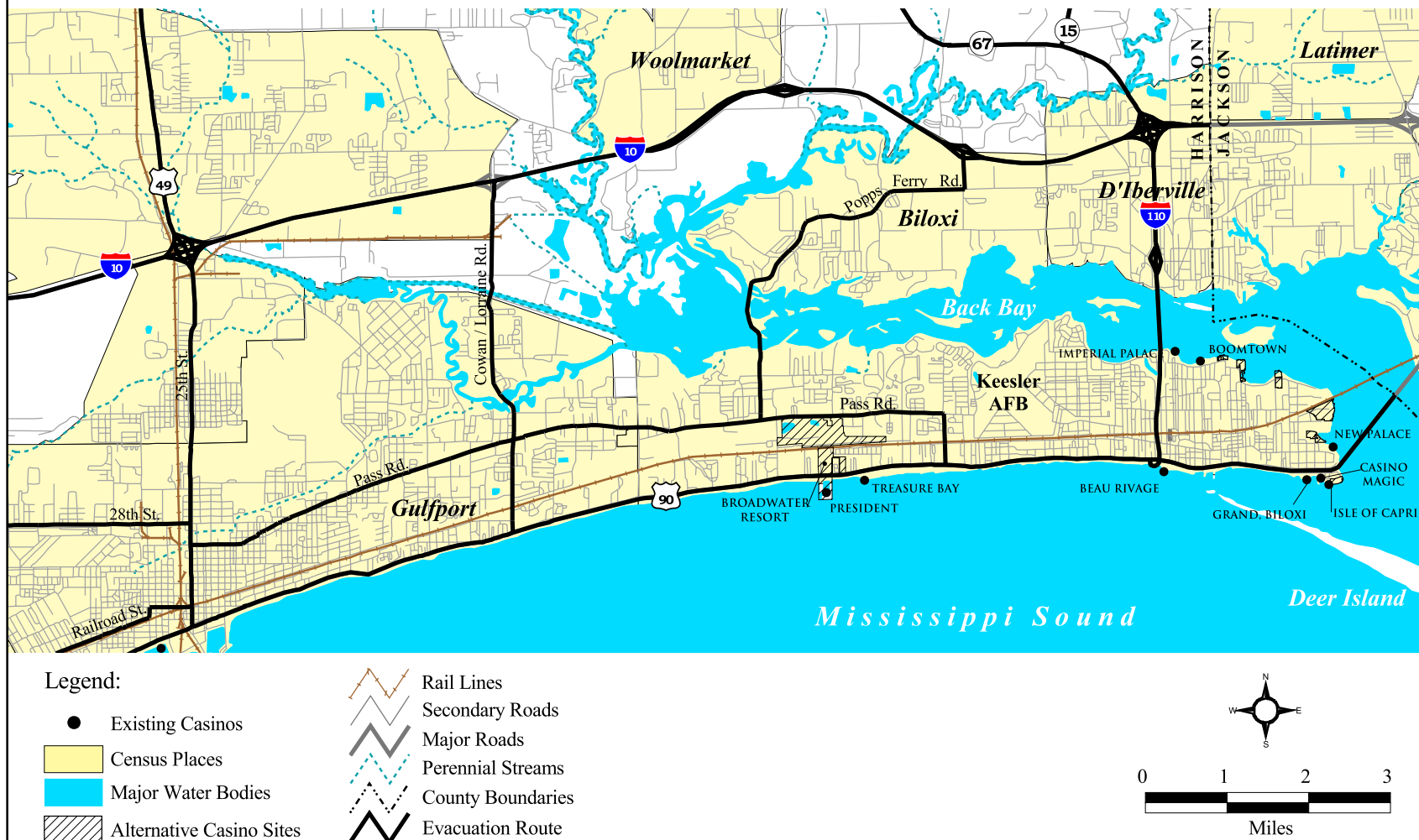


Figure 3.15-1: Harrison County hurricane evacuation routes